

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13G

Under the Securities Exchange Act of 1934

Amendment #2

Name of
Issuer: KLA INSTRUMENTS CORP

Title of Class
of Securities: Common Stock

CUSIP Number: 482480100

1) NAME OF I.R.S. IDENTIFICATION NO. OF REPORTING PERSON

The Prudential Insurance Company of America 22-1211670

2.) MEMBER OF A GROUP: (a) N/A

(b) N/A

3) SEC USE ONLY:

4) PLACE OF ORGANIZATION: A mutual insurance company organized
under the laws of the State of New Jersey

NUMBER OF SHARES BENEFICIALLY OWNED BY REPORTING PERSON WITH:

- 5) Sole Voting Power: 450,500 See Exhibit A
- 6) Shared Voting Power: 4,303,069 See Exhibit A
- 7) Sole Dispositive Power: 450,500 See Exhibit A
- 8) Shared Dispositive Power: 4,706,969 See Exhibit A

9) AGGREGATE AMOUNT BENEFICIALLY OWNED:

5,157,469 See Exhibit A

10) AGGREGATE AMOUNT IN ROW (9) EXCLUDES SHARES: Not Applicable

11) PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9):

10.10 See Exhibit A

12) TYPE OF REPORTING PERSON: IC, IA

ITEM 1(a). NAME OF ISSUER:

KLA INSTRUMENTS CORP

ITEM 1(b). ADDRESS OF ISSUER'S EXECUTIVE OFFICES:

KLA INSTRUMENTS CORP
160 Rio Robles
San Jose, CA 95161

ITEM 2(a). NAME OF PERSON FILING:

The Prudential Insurance Company of America

ITEM 2(b). ADDRESS OF PRINCIPAL BUSINESS OFFICE:

751 Broad Street
Newark, New Jersey 07102-3777

ITEM 2(c). CITIZENSHIP:

A mutual insurance company organized under the
laws of
the State of New Jersey

ITEM 2(d). TITLE OF CLASS OF SECURITIES:

Common Stock

ITEM 2(e). CUSIP NUMBER:

482480100

ITEM 3. The Person filing this statement is an Insurance Company

as defined in Section 3(a) (19) of the Securities Exchange

Act of 1934, and an Investment Adviser registered under

Section 203 of the Investment Advisers Act of 1940.

ITEM 4. OWNERSHIP:

(a) Number of Shares

Beneficially Owned: 5,157,469 See Exhibit A

(b) Percent of Class: 10.10

Number

(c) Powers Of Shares

Sole power to vote or 450,500 See Exhibit A
to direct the vote

Shared power to vote or 4,303,069 See Exhibit A
to direct the vote

Sole power to dispose or 450,500 See Exhibit A
to direct disposition

Shared power to dispose 4,706,969 See Exhibit A
or to direct disposition

ITEM 5. OWNERSHIP OF 5% OR LESS OF A CLASS:

Not Applicable

ITEM 6. OWNERSHIP OF MORE THAN 5% ON BEHALF OF ANOTHER PERSON:

See Exhibit A

ITEM 7. IDENTIFICATION AND CLASSIFICATION OF THE SUBSIDIARY WHICH ACQUIRED THE SECURITY BEING REPORTED ON BY THE ULTIMATE PARENT COMPANY:

Not Applicable

ITEM 8. IDENTIFICATION AND CLASSIFICATION OF MEMBERS OF THE GROUP:

Not Applicable

ITEM 9. NOTICE OF DISSOLUTION OF GROUP:

Not Applicable

ITEM 10. CERTIFICATION:

By signing below, the Prudential Insurance Company of America certifies that, to the best of its knowledge and belief, the securities referred to above were acquired in the ordinary course of business and were not acquired for the purpose of and do not have the effect of changing or influencing the control of the issuer of such securities and were not acquired in connection with or as a participant in any transaction having such purpose or effect.

The filing of this statement should not be construed as an admission that Prudential is, for purposes of Sections 13 or 16 of the Securities Exchange Act of 1934, the beneficial owner of such shares.

SIGNATURE

After reasonable inquiry and to the best of its knowledge and belief, The Prudential Insurance Company of America certifies that the information set forth in this statement is true, complete and correct.

THE PRUDENTIAL INSURANCE COMPANY OF AMERICA

By: Richard S. Biegen
Director, Securities Law Compliance

Date: 01/27/97
As of: 12/31/96

Exhibit A

ITEM 6. OWNERSHIP:

The Prudential Insurance Company of America ('Prudential') may have direct or indirect voting and/or investment discretion over 5,157,469 shares of the Issuer's common stock which are held for the benefit of its clients by its separate accounts, externally managed accounts, registered investment companies, subsidiaries and/or other affiliates. Prudential is reporting the combined holdings of these entities for the purpose of administrative convenience.

These shares were acquired in the ordinary course of business, and not with the purpose or effect of changing or influencing control of the Issuer. The filing of this statement should not be construed as an admission that Prudential is, for the purposes of Section 13 or 16 of the Securities Exchange Act of 1934, the beneficial owner of these shares.